

**AMENDMENTS TO THE DRAWINGS**

The Applicant encloses new drawing sheet 4 containing Figs. 6 and 7.

## **REMARKS**

The Office Action has been carefully considered. It is respectfully submitted that the issues raised are traversed, being hereinafter addressed with reference to the relevant headings appearing in the Detailed Action section of the Office Action.

The Applicant has amended the claims. The Applicant respectfully submits that the amendments to the claim set are fully supported by the originally filed specification.

### **CLAIM REJECTIONS - 35 U.S.C. §102**

Claim 1 has been amended to specify that the heat conductor is located within the passive bend layer, which was originally in claim 2. Support for this amendment is found on page 3 lines 7-14 and page 5 line 4.

At pages 2-4 of the Office Action, the Examiner rejects claims 1-5 and 7 under 35 U.S.C. §102(b) as being anticipated by Furlani et al (U.S. Patent No. 6, 464, 341). A claim is anticipated if all of its limitations are present in a single reference in the prior art. Because all of the limitations of the claims of the present invention are not present in Furlani et al, as discussed below, the present invention is not anticipated by Furlani et al and the rejection is traversed. Reconsideration and withdrawal of the rejection is respectfully requested.

Furlani et al discloses a thermo-mechanical actuator for an ink-jet printhead, the actuator being a cantilevered beam. The beam includes two electrodes, disposed at a top and a bottom of the beam, spaced by a passive bend layer. There is no teaching or suggestion in Furlani et al of a heat conductor positioned within the passive bend layer, as in the claimed actuator. Furlani et al relies only on heat transfer through the passive bend layer, and even teaches the heating of the electrode opposite the bend later so as to return the actuator to be a quiescent position. This is not removing heat by conduction, but injecting more heat, for balance. The inner conductor of the claimed actuator removes heat faster than that of Furlani et al, by being located close to the electrode (page 5 line 20).

### **CLAIM REJECTIONS - 35 U.S.C. §103**

At pages 4-5 of the Office Action, the Examiner rejects Claim 6 under 35 U.S.C. §103(a) as being unpatentable over Furlani et al (U.S. Patent No. 6, 464, 341) in view of Carey et al (U.S. Patent No. 6, 464, 341). Reconsideration and withdrawal of this rejection is respectfully requested in light of the amendments and following comments.

Obviousness can only be established by combining or modifying teachings of the prior art to produce the claimed invention where there is some teaching, suggestion or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. Carey et al is directed to the packaging of light emitting diodes; particularly separating the structural and optical functionality of the packaging. The claimed actuator is directed towards micro-electromechanical systems. (MEMs) The patent classes of the applications are remote from one another, and the structure of LED packaging is functionally and structurally remote from MEMs. Therefore, a person of skill in this technical field and would immediately disregard Carey et al as being irrelevant for teaching any development in the art of the claimed actuators.

Finally, as Claims 2-6 are now appended to a novel and inventive base claim, it is respectfully submitted that they are themselves novel and inventive.

The Applicant deleted line 1 at page 1 of the specification and replaced it with a paragraph titled "Cross Reference to Related Applications". The Applicant has amended the paragraph from lines 1 to 9 at page 5 of the specification. The Applicant submits that this amendment introduces no new matter.

The Applicant has amended Figure 7 on page 4 of the drawings. The Applicant submits that this amendment introduces no new matter.

In view of the foregoing, it is respectfully requested that the Examiner reconsiders and withdraws the rejections under 35 U.S.C. §103 and 102 and 103. The present application is believed to be in condition for allowance. Accordingly, the Applicant respectfully requests a Notice of Allowance of all the claims presently under examination.

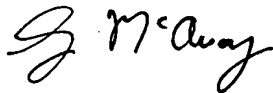
Very respectfully,

Applicant:



---

KIA SILVERBROOK



---

GREGORY JOHN MCAVOY

C/o: Silverbrook Research Pty Ltd  
393 Darling Street  
Balmain NSW 2041, Australia

Email: [kia.silverbrook@silverbrookresearch.com](mailto:kia.silverbrook@silverbrookresearch.com)  
Telephone: +612 9818 6633  
Facsimile: +61 2 9555 7762



4/5

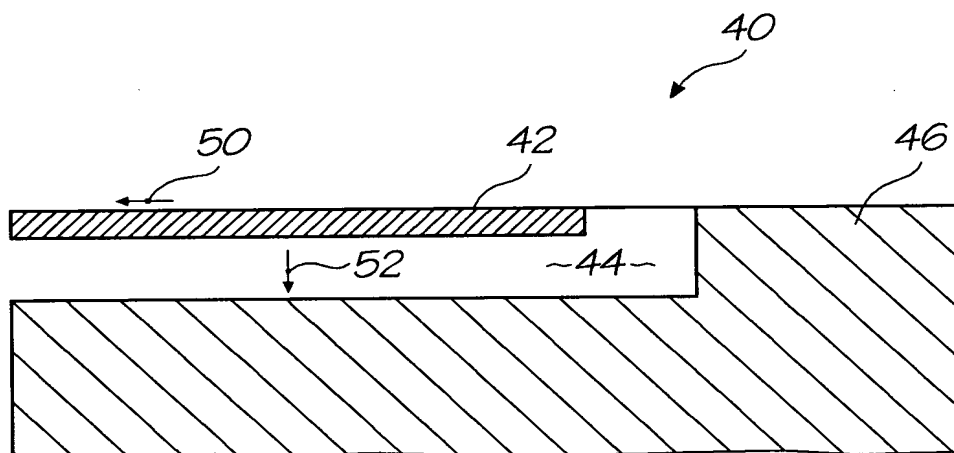


FIG. 6 (PRIOR ART)

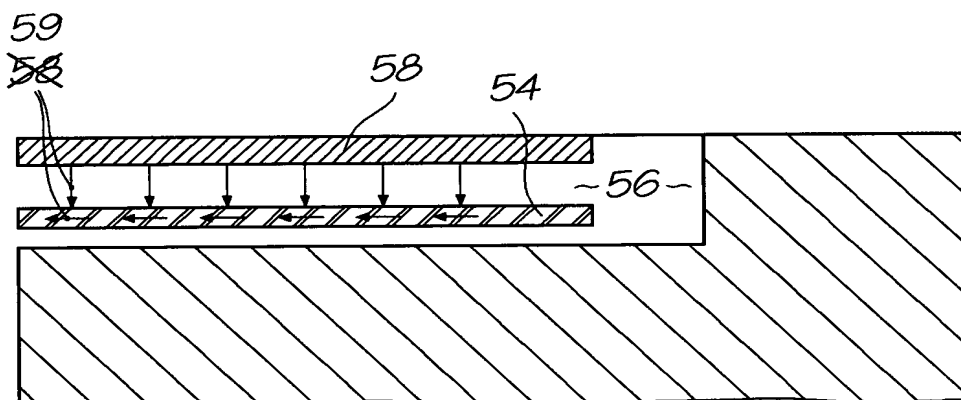


FIG. 7